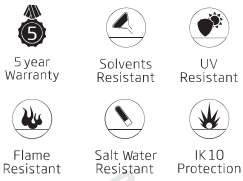
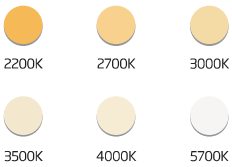


# Flexglo™ F2219B Monochrome - White Light (Silicone)



|                           |                  |                   |                |
|---------------------------|------------------|-------------------|----------------|
| Certification Mark        | UL               | CE                | 8              |
| Test Standard/Directive   | UL2108 Class 2   | CE-EMC            | IS 10322       |
| Certificate Serial Number | 20180801-E360029 | SZEM1712012372LMV | R-41128376     |
| Report Reference          | E360029-20130322 | SZEM171201237201  | NO.20190425001 |

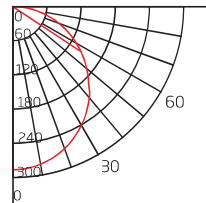


|  |  |   |
|--|--|---|
| <b>Ambient Working Temperature</b><br>12W/m -40~55°C /-40~113°F<br>16.5W/m -40~45°C /-40~113°F | <b>Ambient Installation Temperature</b><br>-40 ~ 50°C /-40~122°F   | <b>Storage Temperature</b><br>-40 ~ 60°C /-40~140°F |
|  | <b>Max. Mounting Surface Temperature</b><br>85°C /185°F<br><i>specified in the non-working state of light.</i> | <b>Constant Current</b><br>DC24V                    |

## C-SFR-F2219B-VB



C-SFR-F2219B-VB-24CC-40K-  
WM-140-80-12W-50



UNIT: cd  
-C90/270

|  |   |                             |                                   |
|--|---|-----------------------------|-----------------------------------|
| Min. Bending Diameter<br>400mm/15.75in | Min. Cutting Length<br>50mm/1.97in<br>7LEDs | 22mm/0.87in<br>19mm/0.75in  | LIGHT SURFACE<br>Vertical Bending |
| Bending-extreme<br>1175 times          | Tensile-instantaneous<br>>100 kg.f          | Twist-extreme<br>1933 times |                                   |

AVERAGE BEAM ANGLE (50%): 111,2°

*Warning: Extreme Destructive Tests in laboratory only, and it's forbidden to operate in practice.*

Note:

- The illuminated light length shall be an integral multiple of min. cutting length.
- The waterproof reliability of the lighting fixture depends on the IP rating of connector (see details on page \*\*\*), and please make sure connector is properly assembled before installation. The highest IP rating we can achieve is IP68.

## Item Code

| C       | SFR                       | F2219B             | VB                   | 24CC                     | 30K  | WM                      | 140        | 80  | 12W          | 50                       |
|---------|---------------------------|--------------------|----------------------|--------------------------|--|-------------------------|------------|-----|--------------|--------------------------|
| Company | Material                  | Product Series     | Bending Direction    | Voltage & Circuit Type   | CCT  | Base & Lighting Surface | LEDs Qty/m | CRI | Power/m      | Min. Cutting Length (mm) |
| Clear   | SFR= Silicone Flex Ribbon | F2219B= Monochrome | VB= Vertical Bending | DC24V & Constant Current | 22K=2200K<br>27K=2700K<br>30K=3000K<br>35K=3500K<br>40K=4000K<br>57K=5700K | WM= White & Milky       | 140        | 80  | 12W<br>16.5W | 50                       |

## Feature

FlexJo™ F2219B Monochrome - White Light (Silicone) is a new item for architectural market with rated power options of 12W/m and 16.5W/m, delivering luminous flux up to 1000lm/m. Thanks to the excellent weatherproof and UV resistant performance of silicone material, it features a wide ambient working temperature range of -40~55 °C excluding -40~45 °C for 16.5W/m, especially suitable for harsh environment application.

Combined with the adoption of the DryWire™ technology, the IP68 Injection-moulded Connector is engineered for outdoor use, owing to its elegant appearance and strong adhesiveness acquired by the liquid silicone injection workmanship.

This product features a ultra long lifespan in outdoor application by leveraging other ClearTech™ such as the PinBoost™ technology enhancing physical reliability of light engine, the TwinFlex™ technology improving the conductivity and optimizing heat dissipation performance, the C-Mask™ technology making the light body self-cleaning and anti-UV and enabling consistent illumination.

## Electrical Parameter

| Category                 | C-SFR-F2219B-VB |       |
|--------------------------|-----------------|-------|
| Voltage (V)              | 24              | 24    |
| Current (mA/m)           | 500.0           | 687.5 |
| Power (W/m)              | 12              | 16.5  |
| Circuit Type             | CC              | CC    |
| LED Type                 | 2835            | 2835  |
| LEDs Qty/m               | 140             | 140   |
| LEDs Qty/unit            | 7               | 7     |
| Unit/m                   | 20              | 20    |
| Min. Cutting Length (mm) | 50              | 50    |
| Min. Cutting Length (in) | 1.97            | 1.97  |

## Optical Parameter


| Item Code                                   | Finished Product |               |                 |     |         |          | LED             |       |
|---|------------------|---------------|-----------------|-----|---------|----------|-----------------|-------|
|   | CCT              | CCT Tolerance | Color Tolerance | CRI | Lumen/m | Lumen/ft | Color Tolerance | CRI   |
| C-SFR-F2219B-VB-24CC-22K-WM-140-80-12W-50   | 2200K            | 2238±82K      | <5SDCM          | 80  | 900     | 274      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-27K-WM-140-80-12W-50   | 2700K            | 2725±115K     | <5SDCM          | 80  | 920     | 280      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-30K-WM-140-80-12W-50   | 3000K            | 3045±140K     | <5SDCM          | 80  | 920     | 280      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-35K-WM-140-80-12W-50   | 3500K            | 3465±170K     | <5SDCM          | 80  | 950     | 290      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-40K-WM-140-80-12W-50   | 4000K            | 3985±225K     | <5SDCM          | 80  | 950     | 290      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-57K-WM-140-80-12W-50   | 5700K            | 5665±355K     | <5SDCM          | 80  | 950     | 290      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-22K-WM-140-80-16.5W-50 | 2200K            | 2238±82K      | <5SDCM          | 80  | 1200    | 366      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-27K-WM-140-80-16.5W-50 | 2700K            | 2725±115K     | <5SDCM          | 80  | 1300    | 396      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-30K-WM-140-80-16.5W-50 | 3000K            | 3045±140K     | <5SDCM          | 80  | 1300    | 396      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-35K-WM-140-80-16.5W-50 | 3500K            | 3465±170K     | <5SDCM          | 80  | 1400    | 427      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-40K-WM-140-80-16.5W-50 | 4000K            | 3985±225K     | <5SDCM          | 80  | 1400    | 427      | <2.3SDCM        | 82~87 |
| C-SFR-F2219B-VB-24CC-57K-WM-140-80-16.5W-50 | 5700K            | 5665±355K     | <5SDCM          | 80  | 1300    | 396      | <2.3SDCM        | 82~87 |

### Note:

1. CCT Tolerance refers to target CCT and tolerance (ANSI C78.377).
2. Color Tolerance refers to CLEAR standard for the different batch of finished product and LED, and it's <3SDCM for same batches of finished product.

# Flexglo™ F2219B Monochrome - White Light (Silicone)

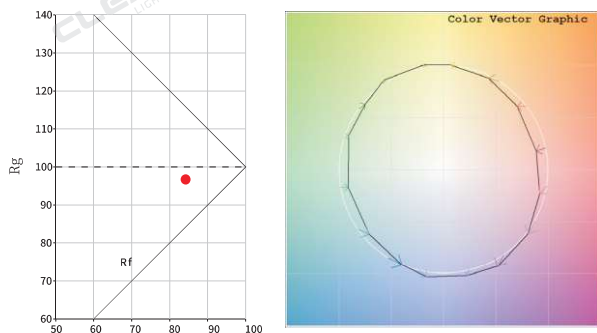
## Max. Running Length Input: DC24V

|                    |                                      |  |  |
|--------------------|--------------------------------------|--|--|
|                    |                                      |  |  |
| Type               | Silicone Injection-moulded Connector |  |  |
| IP Rating          | IP68                                 |  |  |
| Item Code          | Single-end Feed                      | Double-end Feed  |  |
| C-SFR-F2219B-12W   | 15m/49.2ft                           | 30m/98.4ft   |  |
| C-SFR-F2219B-16.5W | 10m/32.8ft                           | 20m/65.6ft   |  |

**Note:**

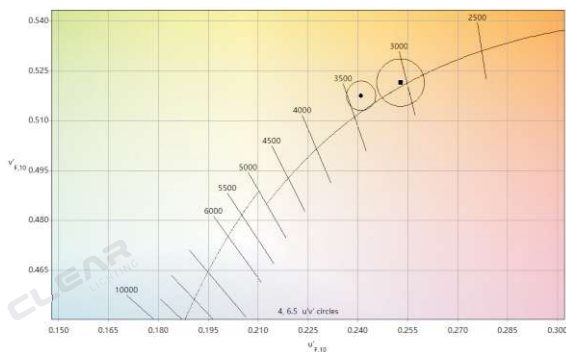
1. Above conclusion is based on voltage drop testing result of the light with 0.3m (0.98ft) cable only.
2. The maximum running length is based on the light in static full loading status.
3. Above running length is only the light length excluding lengths of connectors.
4. The delivery length might be subject to the maximum packing length.

### TM-30



IES TM-30-15 is a new system of several related measures and graphics that can be used together to effectively evaluate and communicate a light source's color rendering properties. The development of the method involved synthesizing multiple related research efforts and combining ideas into a single, cohesive system of objective information that can be used to aid decision-making processes, such as finding the preferred light source for a given application or evaluating the tradeoffs between efficacy and color rendering.

| Measure        |    | Description  |
|----------------|----|--|
| Fidelity Index | Rf | Analogous to CIE Ra (CRI), Characterizes the average color shift of the 99 CES to characterize the overall level of similarity between the test source and reference illuminant. Values range from 0 to 100.   |
| Gamut Index    | Rg | Compares the area enclosed by the average chromaticity coordinates in each of 16 hue bins to characterize the average saturation level of the test source compared to the reference illuminant. A neutral score is 100, with values greater than 100 indicating an increase in saturation and values less than 100 indicating a decrease in saturation. The range in values grows as fidelity decreases. |





### Color Matching

Color temperature value stated on all CLEAR's documents refers to finished products. LED's color temperature would be shifted by the light diffuser made of PVC or silicone material. CLEAR calibrates color temperature and color coordinate of tailor-made LEDs with proprietary color-matching algorithms to produce a precise color temperature and color coordinate close to black body locus for finished products. All LEDs would be strictly tested and tightly controlled to ensure finished products can meet ANSI standard.

## F2219B Connector (Silicone)

| Type/IP Rating                       | Bending Direction | Front Connector End  | Front Connector Side from Left                              | Front Connector Side from Right                             | Front Connector Bottom                                     | Seamless Middle Connector & Power Feed | Middle Connector & Power T-feed         | Jumper                           | End Cap      |
|--------------------------------------|-------------------|--|---|---|--|--|---|----------------------------------|--------------|
| Silicone Injection-moulded Connector | VB                | F2219B-VB-SIM/FC-01/02-E-0.3m/1m/3m/5m/10m/15m/20m 18AWG*2 | F2219B-VB-SIM/FC-01/02-SL-0.3m/1m/3m/5m/10m/15m/20m 18AWG*2 | F2219B-VB-SIM/FC-01/02-SR-0.3m/1m/3m/5m/10m/15m/20m 18AWG*2 | F2219B-VB-SIM/FC-01/02-B-0.3m/1m/3m/5m/10m/15m/20m 18AWG*2 | N/A                                    | F2219B-VB-SIM/MC-PTF-0.3m/1m/3m 18AWG*2 | F2219B-VB-SIM/JU-0.3m/1m 18AWG*2 | F2219-SIM/EC |
| IP68                                 |                   |  |   |   |  | N/A                                    |   |                                  |              |

## F2219 Mounting Profile

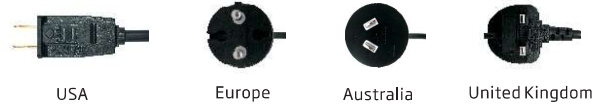
| Picture   | Name/Item Code  | Installation Way   |
|---|---|--|
|  | Serrated Aluminum Profile<br>F2219-SA/PL-20/500/1000/2000mm |  |

# Flexglo™ F2219B Wiring Diagram

1. Please use a constant voltage power supply with corresponding output voltage, and rated wattage of the power supply shall be 25% more than the actual power consumption of light to increase its life expectancy;
2. This wiring diagram is using the mains of AC230V with brown and blue wires as an example, and please connect with the corresponding live and neutral wires for other mains electricity;
3. Dimming frequency ranges from 100Hz to 2000Hz, and 500Hz is recommended.

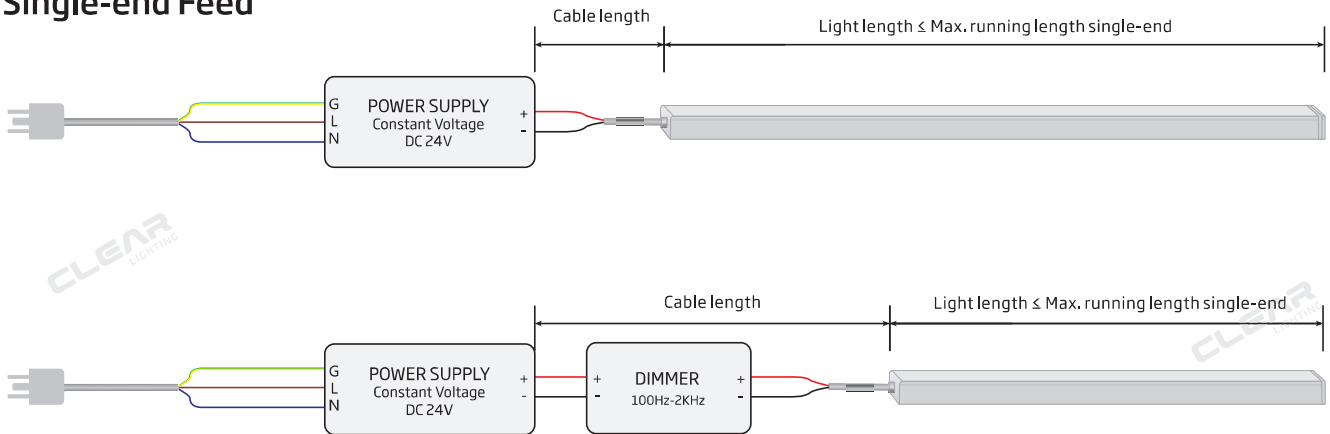
Input AC100~240V

Ground wire  
Live wire  
Neutral wire



4. Types of standard plugs are optional if power cord is purchased from CLEAR.

## Single-end Feed



### Light Length:

The length of the longest single light in parallel connection or sum of lights in series connection.

### Cable Length:

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

### How to Minimize Voltage Drop

1. Please ensure the cable length is not more than the table "Max. Cable Length" according to light length and its wire gauge.
2. Please ensure the light length is less than the cable "Max. Running Length Single-end Feed".

## Max. Running Length Single-end Feed

Input: DC24V

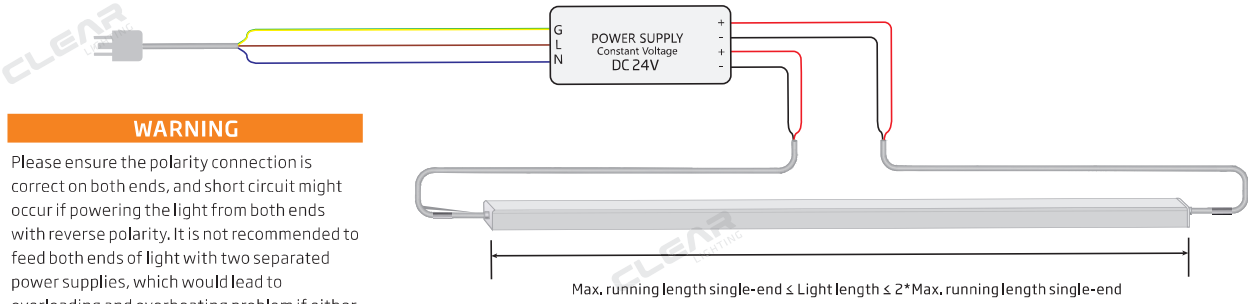
| Connector Type     | Injection-moulded Connector |
|--------------------|-----------------------------|
| Wire Gauge         | 18AWG*2                     |
| C-SFR-F2219B-12W   | 15m/49.2ft                  |
| C-SFR-F2219B-16.5W | 10m/32.8ft                  |

Note:

1. Above conclusion is based on voltage drop testing result of the light with 0.3m (0.98ft) cable only.
2. The maximum running length is based on the designated light in static full loading status.
3. Above running length is only the light length excluding lengths of connectors.
4. The delivered length might be subject to the maximum packing length.

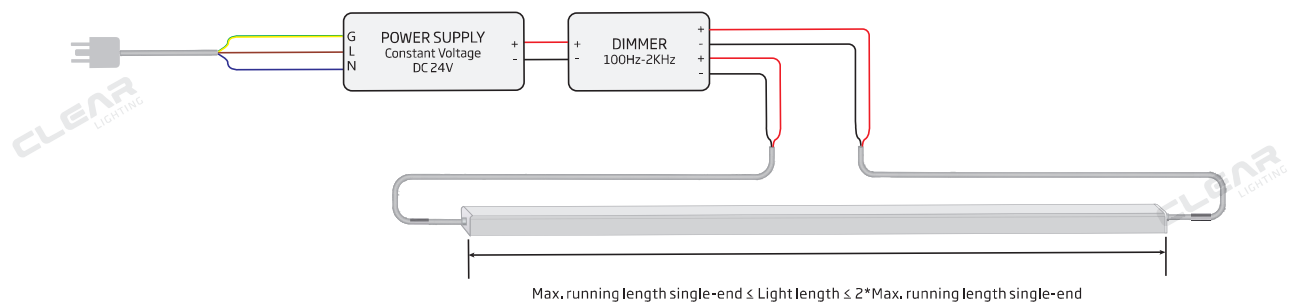
## Double-end Feed

The following wiring diagram with double-end feed to run length that is longer than max. running length for single-end feed but less than twice the value.



### WARNING

Please ensure the polarity connection is correct on both ends, and short circuit might occur if powering the light from both ends with reverse polarity. It is not recommended to feed both ends of light with two separated power supplies, which would lead to overloading and overheating problem if either power supply is failed.



### Light Length:

The length of the longest single light in parallel connection or sum of lights in series connection.

### Cable Length:

The length of an electrical cable between power output end and light input end, and the cables for serial interconnection are inclusive.

### How to Minimize Voltage Drop

1. It is optimal to position the power supply in the middle of a single light or multiple lines in daisy chain to keep the equivalent cable length on both ends for double-end feed.
2. Please ensure the cable length is not more than the table "Max. Cable Length" according to the half of light length and its wire gauge.
3. Please ensure the light length is less than the table "Max. Running Length Double-end Feed".

## Max. Running Length Double-end Feed

Input: DC24V

| Connector Type     | Injection-moulded Connector |
|--------------------|-----------------------------|
| Wire Gauge         | 18AWG*2                     |
| C-SFR-F2219B-12W   | 30m/98.4ft                  |
| C-SFR-F2219B-16.5W | 20m/65.6ft                  |

Note:

1. Above conclusion is based on voltage drop testing result of the light with 0.3m (0.98ft) cable only.
2. The maximum running length is based on the designated light in static full loading status.
3. Above running length is only the light length excluding lengths of connectors.
4. The delivered length might be subject to the maximum packing length.

# F2219B Max. Cable Length (Silicone)

Input: DC24V

| Item Code          | Light Length (m) | Max. Cable Length    |       |                      |       |                      |       |                      |       |                      |       |
|--------------------|------------------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|
|                    |                  | 0.32 mm <sup>2</sup> |       | 0.52 mm <sup>2</sup> |       | 0.81 mm <sup>2</sup> |       | 1.32 mm <sup>2</sup> |       | 2.07 mm <sup>2</sup> |       |
|                    |                  | 22AWG                |       | 20AWG                |       | 18AWG                |       | 16AWG                |       | 14AWG                |       |
|                    |                  | m                    | ft    | m                    | ft    | m                    | ft    | m                    | ft    | m                    | ft    |
| C-SFR-F2219B-12W   | 1                | 37.2                 | 122.1 | 60.5                 | 198.4 | 94.2                 | 309.0 | 153.5                | 503.6 | 240.7                | 789.7 |
|                    | 2                | 18.4                 | 60.4  | 29.9                 | 98.1  | 46.6                 | 152.8 | 75.9                 | 249.0 | 119.0                | 390.5 |
|                    | 3                | 12.3                 | 40.4  | 20.0                 | 65.6  | 31.2                 | 102.2 | 50.8                 | 166.6 | 79.6                 | 261.3 |
|                    | 4                | 9.3                  | 30.4  | 15.0                 | 49.3  | 23.4                 | 76.8  | 38.2                 | 125.2 | 59.8                 | 196.3 |
|                    | 5                | 7.4                  | 24.3  | 12.0                 | 39.5  | 18.8                 | 61.5  | 30.6                 | 100.3 | 47.9                 | 157.2 |
|                    | 6                | 6.2                  | 20.3  | 10.0                 | 32.9  | 15.6                 | 51.3  | 25.5                 | 83.6  | 40.0                 | 131.1 |
|                    | 7                |                      |       | 8.6                  | 28.2  | 13.4                 | 43.9  | 21.8                 | 71.5  | 34.2                 | 112.1 |
|                    | 8                |                      |       | 7.5                  | 24.7  | 11.7                 | 38.5  | 19.1                 | 62.8  | 30.0                 | 98.4  |
|                    | 9                |                      |       | 6.7                  | 21.9  | 10.4                 | 34.2  | 17.0                 | 55.7  | 26.6                 | 87.3  |
|                    | 10               |                      |       | 6.0                  | 19.7  | 9.4                  | 30.7  | 15.2                 | 50.0  | 23.9                 | 78.4  |
|                    | 11               |                      |       | 5.5                  | 17.9  | 8.5                  | 27.9  | 13.8                 | 45.4  | 21.7                 | 71.2  |
|                    | 12               |                      |       |                      |       | 7.8                  | 25.6  | 12.7                 | 41.7  | 19.9                 | 65.3  |
|                    | 13               |                      |       |                      |       | 7.2                  | 23.6  | 11.7                 | 38.4  | 18.4                 | 60.2  |
|                    | 14               |                      |       |                      |       | 6.7                  | 21.9  | 10.9                 | 35.6  | 17.0                 | 55.9  |
|                    | 15               |                      |       |                      |       | 6.2                  | 20.4  | 10.1                 | 33.3  | 15.9                 | 52.2  |
| C-SFR-F2219B-16.5W | 1                | 26.8                 | 87.9  | 43.5                 | 142.8 | 67.8                 | 222.5 | 110.5                | 362.6 | 173.3                | 568.6 |
|                    | 2                | 13.4                 | 43.9  | 21.8                 | 71.4  | 33.9                 | 111.2 | 55.3                 | 181.3 | 86.7                 | 284.3 |
|                    | 3                | 8.9                  | 29.3  | 14.5                 | 47.6  | 22.6                 | 74.2  | 36.8                 | 120.9 | 57.8                 | 189.5 |
|                    | 4                | 6.7                  | 22.0  | 10.9                 | 35.7  | 17.0                 | 55.6  | 27.6                 | 90.6  | 43.3                 | 142.1 |
|                    | 5                |                      |       | 8.7                  | 28.6  | 13.6                 | 44.5  | 22.1                 | 72.5  | 34.7                 | 113.7 |
|                    | 6                |                      |       | 7.3                  | 23.8  | 11.3                 | 37.1  | 18.4                 | 60.4  | 28.9                 | 94.8  |
|                    | 7                |                      |       | 6.2                  | 20.4  | 9.7                  | 31.8  | 15.8                 | 51.8  | 24.8                 | 81.2  |
|                    | 8                |                      |       | 5.4                  | 17.9  | 8.5                  | 27.8  | 13.8                 | 45.3  | 21.7                 | 71.1  |
|                    | 9                |                      |       |                      |       | 7.5                  | 24.7  | 12.3                 | 40.3  | 19.3                 | 63.2  |
|                    | 10               |                      |       |                      |       | 6.8                  | 22.2  | 11.1                 | 36.3  | 17.3                 | 56.9  |

Note:

1. Please check the wire gauge of your connector in the table "Max. Running Length".

E.g.,

Single-end feed, C-SFR-F2219B-12W, 5m light length when with 18AWG wire, max. cable length should refer to the corresponding value 18.8m for 5m light length;

Double-end feed, C-SFR-F2219B-12W, 10m light length when with 18AWG wire, max. cable length of each end should refer to the corresponding value 18.8m for half of light length 10m;

2. The above cable lengths are calculated based on minimum working voltage of 20.5V to activate the built-in constant current IC on circuitry, which enables input voltage range of 22-26V.